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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
ATSUSHI TOMOKUNI : EXAMINER: CHANNAVAJALA, L.  
SERIAL NO: 10/743,080 :  
FILED: DECEMBER 23, 2003 : GROUP ART UNIT: 1611  
FOR: SKIN CLEANSING :  
COMPOSITION :

DECLARATION UNDER 37 C.F.R. §1.132

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Now comes Mr. Atsushi Tomokuni who deposes and declares that:

1. I am a graduate of Kyoto University, the Graduate School of Engineering, and received my Masters degree in the year 1998, with a major in synthetic chemistry.
2. I have been employed by Kao Corporation the assignee of the above-identified application and since 1998 been employed as a researcher in the Beauty Care Research Laboratories, responsible for development of skin cleansing compositions.
3. I am a named inventor of the above-identified application.
4. In order to test formation of an isotropic liquid phase exhibiting a bicontinuous structure having a lipophilic amphiphile incorporated therein by adding a lipophilic amphiphile to the liquid crystal composition of Watanabe et al., the following experiments

were conducted by me or under my direct supervision and control.

Example 1 of Watanabe et al. U.S. 66,346,507 was produced as Composition A.

Compositions B-F were prepared by adding 1-dodecanol, a lipophilic amphiphile.

Corresponding amounts of water were reduced in order to maintain proportions of the remaining components.

	Ingredient	A	B	C	D	E	F
(A) nonionic surfactant	Polyoxyethylene (5 mol) Dodecyl Ether	25	25	25	25	25	25
(B) water-soluble	Ethanol	5	5	5	5	5	5
(C) silicone oil	Decamethylcyclopentasiloxane	45	45	45	45	45	45
(D) Water	Purified Water	25	24	22	20	15	10
Lipophilic Amphiphile	1-Dodecanol	-	1	3	5	10	15
		100	100	100	100	100	100

The compositions were analyzed visually and through polarized plates according to the following procedure.

Step 1. Evaluation of whether sample is a “transparent one phase” or not.

- 1) Each sample was put in a 10 ml glass bottle.
- 2) The samples were observed visually. When the sample was transparent and not separated, the sample was evaluated as “transparent one phase”.

Step 2. Evaluation of whether sample is an “isotropic solution (isotropic liquid phase)

- 1) The same bottles as step 1) above were placed between two orthogonally-polarized polarization plates which were arranged in parallel planes and contained a box to exclude external light from the surrounding area.
- 2) The samples were illuminated with light from behind one of the polarization

plates, and the bottles were observed visually from the back of the other polarization plate.

3) When the sample did not gleam, it was evaluated as an isotropic liquid, while when the sample was gleamed, it was evaluated as an anisotropic liquid (liquid crystal).

Step 3. Evaluation of whether sample has “bicontinuous structure”.

Samples which were identified as having an isotropic liquid phase were evaluated for having a bicontinuous structure.

1) Each sample was put in a 10 ml glass bottle. Two bottles were prepared for each sample.

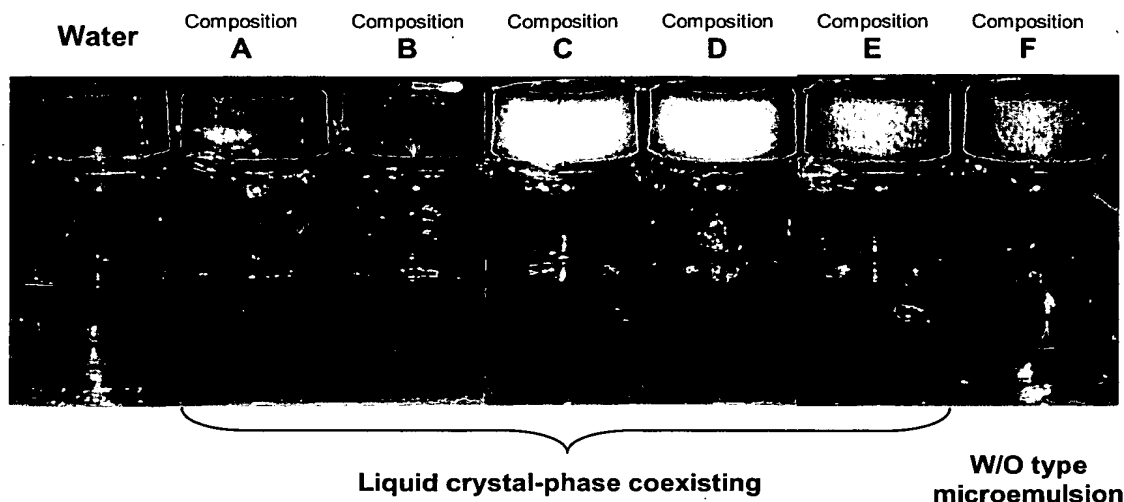
2) A few drops of liquid paraffin which comprised an oil-soluble colorant were added drop-wise to one sample, and a few drop of water which comprised a water soluble colorant were added drop-wise to the other sample.

3) Both samples were left at rest for one day.

4) After one day, if both the liquid paraffin and the water were dissolved in the sample, the sample was evaluated as having bicontinuous structure. If only the liquid paraffin was dissolved in the sample, the sample was evaluated as W/O microemulsion.

Pictures of compositions A-F taken through polarized plates.

***Pictures of compositions taken through polarized plates***



None of Compositions A-E provided any evidence of an isotropic solution having a bicontinuous structure in terms of transparency or light polarization and were illustrative of a liquid crystal-phase coexisting system. Composition F, while visibly transparent, was in the form of a w/o type microemulsion and failed to demonstrate light polarization and also failed to dissolve a water-soluble dye.



Compositions having an isotropic solution having a bicontinuous structure have been demonstrated as being able to dissolve both a water-soluble colorant and oil-soluble colorant.

The pictures illustrated that an isotropic solution having a bicontinuous structure, having 1-dodecanol contained therein, is not formed by adding a lipophilic amphiphile to a liquid crystal-phase coexisting system.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is believed to be true and correct. 28 USC 1746(1)

Atsushi Tomokuni  
Atsushi Tomokuni

April 24, 2009  
Date